ENVIRONMENTAL RESOLUTIONS, INC.

April 15, 2005

Mr. Magdy Baiady
California Regional Water Quality Control Board
Los Angeles Region
320 West 4th Street, Suite 200
Los Angeles, California 90013

Subject: **Quarterly Report for the First Quarter 2005**
Mobil Station 18L2N
17836 Devonshire Street
Northridge, California
CRWQCB Case No. 913250061A

Mr. Baiady:

At the request of ExxonMobil Oil Corporation (ExxonMobil), formerly Exxon Company, U.S.A., Environmental Resolutions, Inc. is submitting the First Quarter 2005 ExxonMobil Quarterly Report for the above-referenced site. The format utilized for the report consolidates groundwater sampling (where applicable), Title 23, Subchapter 16 reporting and consultant progress updates for ExxonMobil into one summary report.

Please call me at (949) 457-7999 if you have any questions.

Sincerely,
Environmental Resolutions, Inc.

Patrick J. Toelkes
Project Manager
P.G. 7155

cc: Ms. Jeneé Briggs, ExxonMobil

20372 North Sea Circle, Lake Forest, California 92630-8806 949-457-8950 (FAX 457-8956)
Lake Forest • Novato • Seattle

QUARTERLY GROUNDWATER MONITORING REPORT SUMMARY SHEET
FIRST QUARTER 2005
Mobil Station 18L2N, 17836 Devonshire Street, Northridge, California
ERI 3234

SITE INFORMATION:	
Responsible Party / Contact:	ExxonMobil Oil Corporation / Ms. Jeneé Briggs (310) 212-2904
Responsible Party Address:	3700 West 190th Street, TPT2-4, Torrance, California 90504
Station / Site ID:	18L2N
Current Site Use:	Operating Mobil gasoline service station
Global ID:	T0603702181
Lead Regulatory Agency/Case#/Case Worker:	CRWQCB #913250061A / Magdy Baiady (213) 576-6699
Date of Most Recent Regulatory Letter:	December 29, 2004
Primary Consultant / Project Manager:	Environmental Resolutions, Inc. / Mr. Patrick J. Toelkes (949) 457-7999
Well Monitoring Contractor:	Environmental Resolutions, Inc.
Site Monitoring Frequency:	Quarterly
Well(s) and/or Subsurface Water Within 2,000 ft.:	None
Number of Groundwater Wells On Site:	3
Number of Groundwater Wells Off Site:	None
Phase of Vadose Investigation:	Assessed
Phase of Groundwater Investigation:	Monitoring and sampling
Nature of Impact:	Gasoline
SITE HYDROLOGY	
Number of Water Zones:	1
Depth to Groundwater Range (ft.)	85.65 - 88.03
Potentiometric Surface Elevation Range (ft-MSL):	892.62 - 895.18
Qtrly Change in Avg. Groundwater Elevation (ft):	0.39 ft. decrease
Flow Direction/Hydraulic Gradient (ft/ft):	Southeast / 0.02 ft/ft

FIELD ACTIVITY (CURRENT QUARTER):		**Wells with LPH:**	
		Well	**Feet**
Groundwater Monitoring Date:	01/26/05	N/A	N/A
Groundwater Wells Gauged:	3		
Groundwater Wells Sampled:	3		
Sampling Method:	Manual		
Gallons of Groundwater Purged:	93		
Treatment Method / Disposal Facility:	Crosby & Overton		
Analysis:	TPHg by EPA Method 8015B; BTEX and fuel oxygenates by EPA Method 8260B; DIPE by EPA Method 8260/SA05-77		

GROUNDWATER CONDITIONS:			
No. of wells with Detectable Benzene:	1	Benzene Range (ug/l):	<1.00 - 50.0
No. of wells with Detectable TPHg:	1	TPHg Range (ug/l):	<50.0 - 1,280
No. of wells with Detectable MTBE:	1	MTBE Range (ug/l):	<2.00 - 3.60
No. of wells with Detectable TBA:	0	TBA Range (ug/l):	<10.0

ADDITIONAL INFORMATION:

WORK PERFORMED THIS QUARTER:

Groundwater monitoring and sampling of 3 wells.

QUARTERLY GROUNDWATER MONITORING REPORT SUMMARY SHEET
FIRST QUARTER 2005
Mobil Station 18L2N, 17836 Devonshire Street, Northridge, California
ERI 3234

TREND ANALYSIS:

Groundwater elevations decreased by an average of 0.39 feet since the last monitoring event.

Dissolved phase MTBE was present in groundwater monitoring well MW1 only.

Benzene was detected in groundwater monitoring well MW2 only.

TBA was not detected in the groundwater monitoring wells.

ACTIVITIES PERFORMED THIS QUARTER:

Conducted quarterly groundwater monitoring and sampling.

Submitted quarterly groundwater monitoring report for first quarter 2005 to the CRWQCB.

ACTIVITIES PROPOSED NEXT QUARTER:

Conduct quarterly groundwater monitoring and sampling.

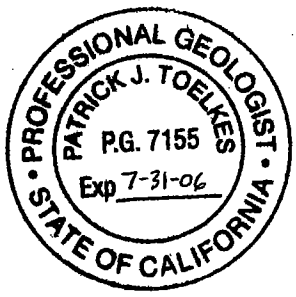
Prepare and submit the quarterly groundwater monitoring report for second quarter 2005 to the CRWQCB.

Invoke the 60-day rule and implement the feasibility testing work plan.

For any questions, please call Ms. Jeneé Briggs with ExxonMobil at (310) 212-2904 or Mr. Patrick J. Toelkes with ERI at (949) 457-7999.

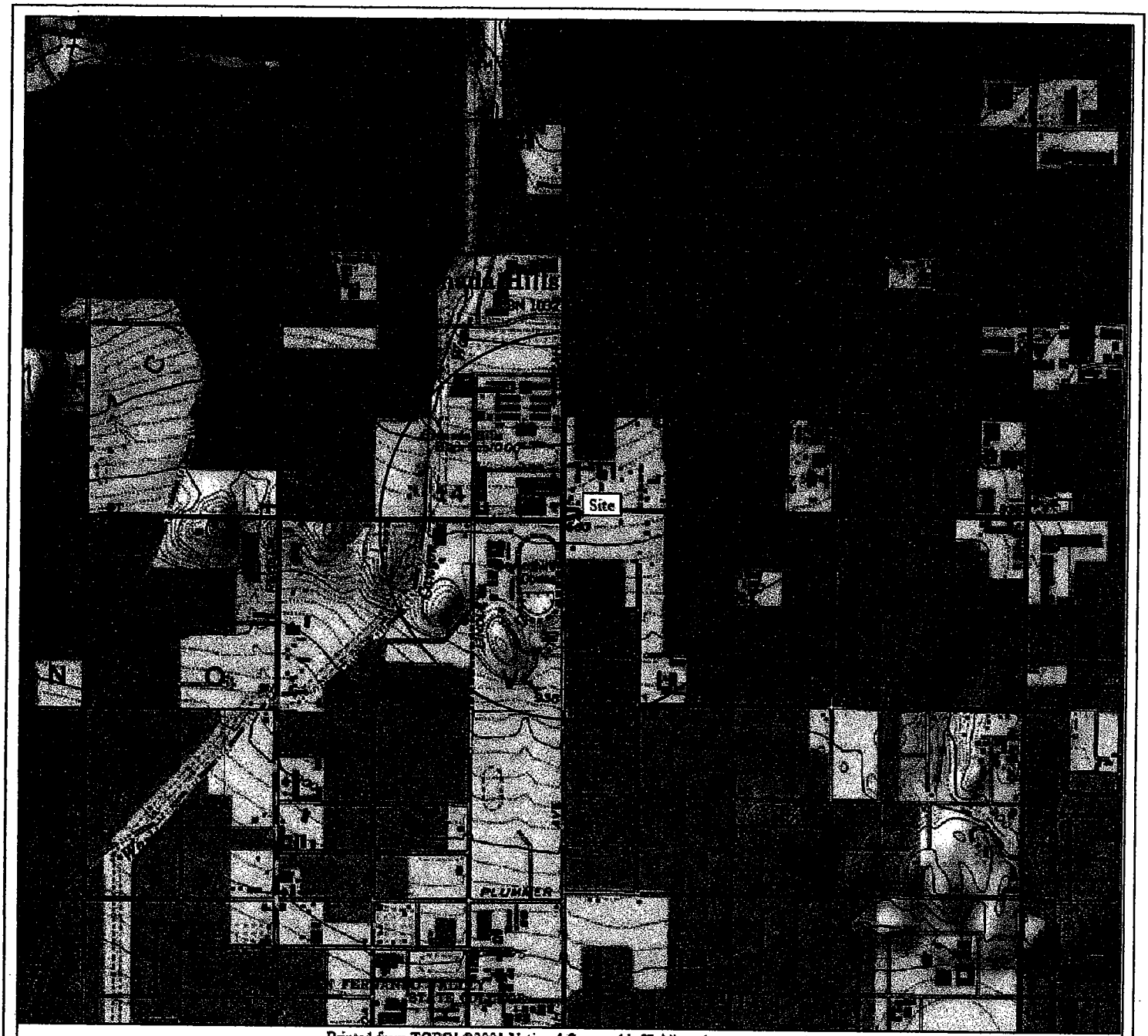
Respectfully submitted,

Patrick J. Toelkes
P.G. 7155



ATTACHED:

- Site Location Map (Plate 1)
- Site Vicinity Map (Plate 2)
- Groundwater Contour Map – 1/26/05 (Plate 3)
- Groundwater Sample Analyses Map – 1/26/05 (Plate 4)
- Groundwater Monitoring and Sampling Schedule and Well Construction Details (Table 1)
- Water Level Measurements and Groundwater Analyses (Table 2)
- Cumulative Water Level Measurements and Groundwater Analyses (Table 3)
- Laboratory Report and Chain-of-Custody Record
- Groundwater Sampling Field Logs
- ERI Groundwater Monitoring and Sampling Field Protocol



Printed from TOPO! ©2001 National Geographic Holdings (www.topo.com)

FN 3234TOPO

Map Name: Oat Mountain, CA
Version: 1969

EXPLANATION

1/2–mile radius circle

N

APPROXIMATE SCALE

0 0.5 1 mile

SOURCE:
Modified from a map
provided by
National Geographic's TOPO!

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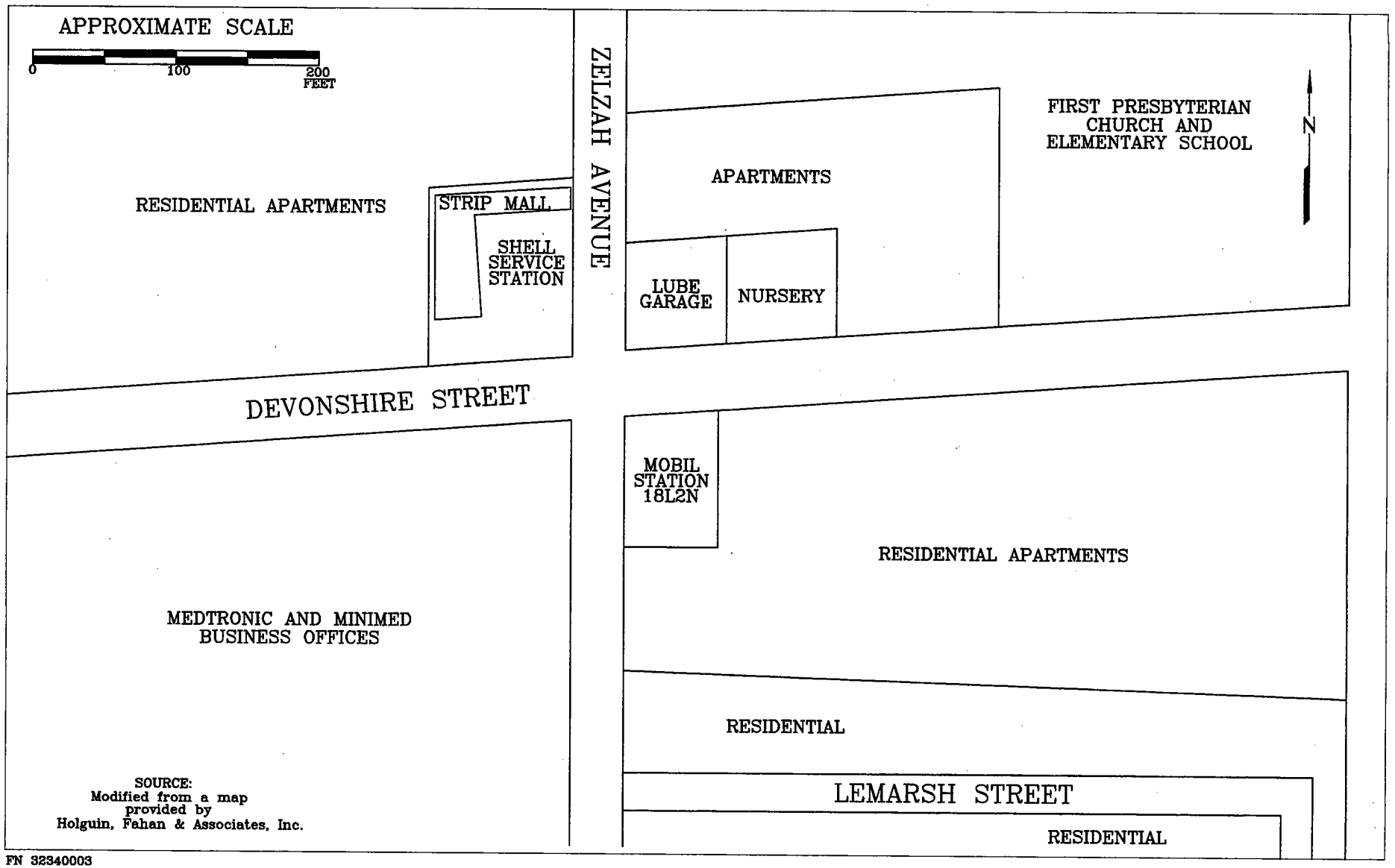
SITE LOCATION MAP

MOBIL STATION 18L2N
17836 Devonshire Street
Northridge, California

PROJECT NO. 3234

PLATE 1



SOURCE:
Modified from a map
provided by
Holguin, Fahan & Associates, Inc.

FN 32340003

ERI ENVIRONMENTAL RESOLUTIONS, INC.

SITE VICINITY MAP

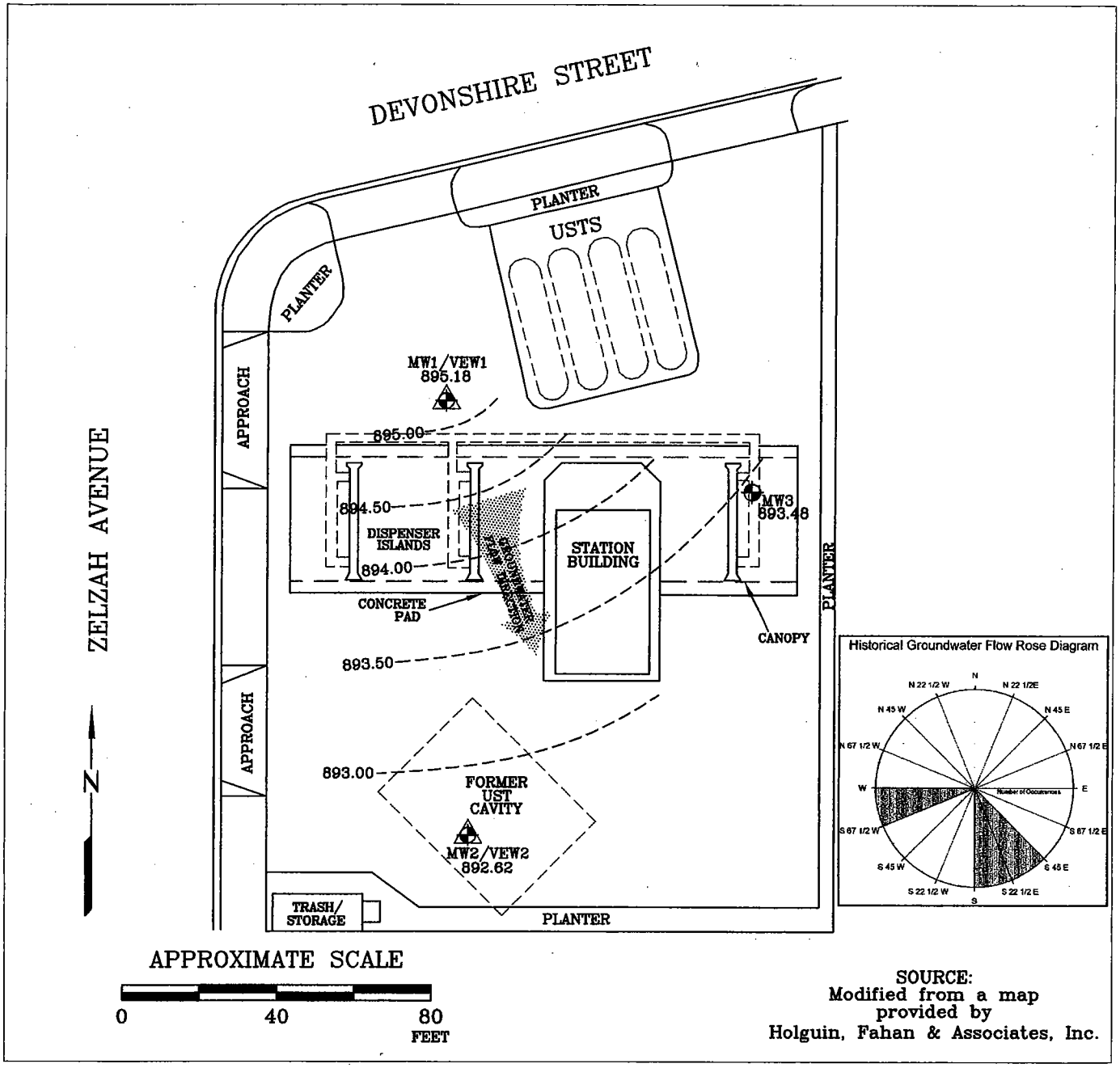
MOBIL STATION 18L2N
17836 Devonshire Street
Northridge, California

EXPLANATION

PROJECT NO. 3234

PLATE 2

DATE: 02/25/05



SOURCE:
Modified from a map
provided by
Holguin, Fahan & Associates, Inc.

FN 32340004

EXPLANATION

MW3	Groundwater monitoring well
MW2/VEW2	Dual-completion vadose/ groundwater monitoring well
895.18	Groundwater elevation (feet, relative to mean sea level)
-------	Line of equal groundwater elevation
-------	Product line

ENVIRONMENTAL RESOLUTIONS, INC.

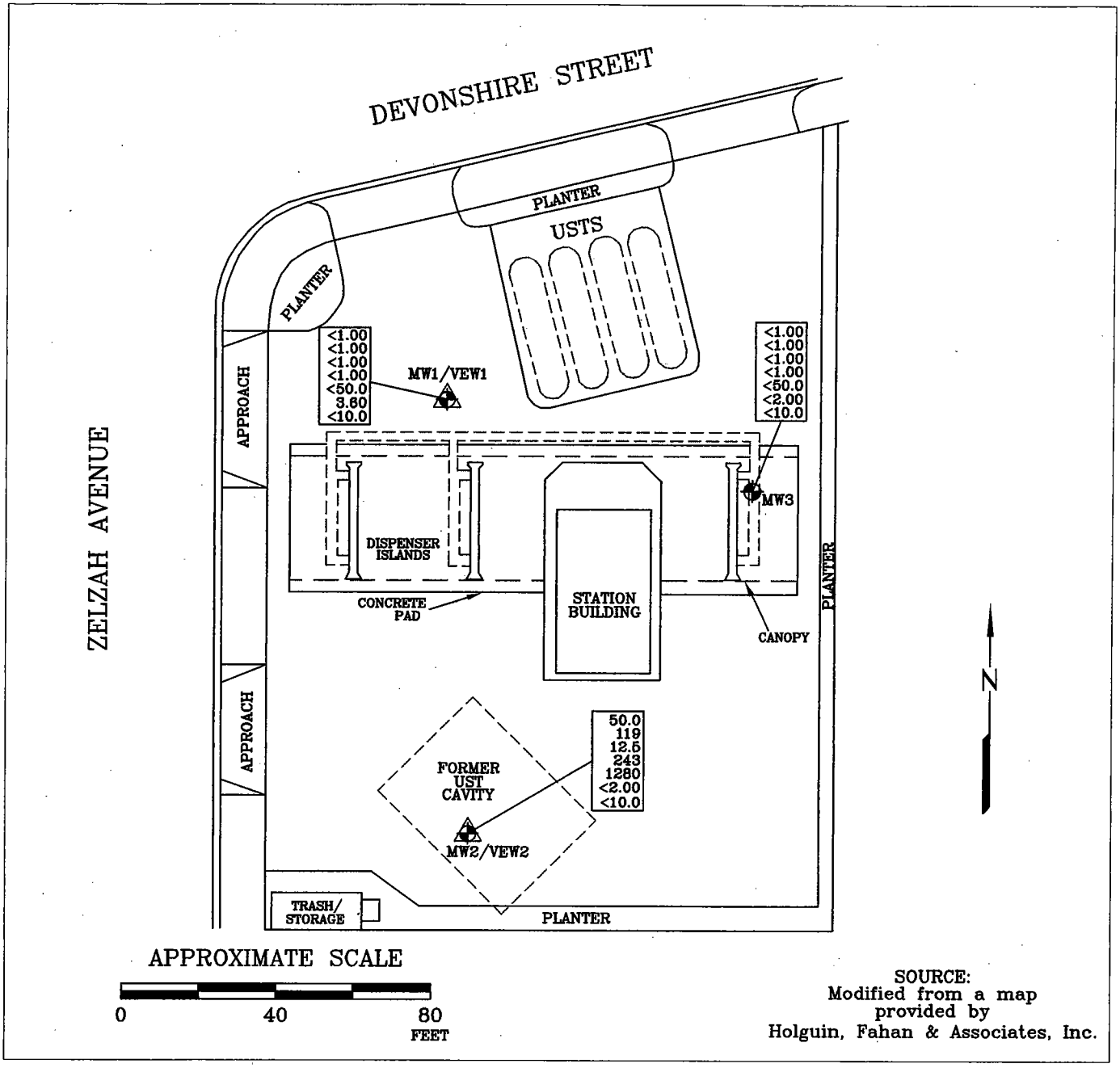
GROUNDWATER CONTOUR MAP 01/26/05

MOBIL STATION 18L2N
17836 Devonshire Street
Northridge, California

PROJECT NO. 3234

PLATE 3

DATE: 02/25/05



FN 32340004

EXPLANATION

MW3	Groundwater monitoring well
MW2/VEW2	Dual-completion vadose/ groundwater monitoring well
------	Product line

<1.00	Benzene concentration in ug/l
<1.00	Toluene concentration in ug/l
<1.00	Ethylbenzene concentration in ug/l
<1.00	Total xylenes concentration in ug/l
<50.0	Total petroleum hydrocarbons as gasoline concentration in ug/l
<2.00	Methyl tertiary butyl ether concentration in ug/l
<10.0	Tertiary butyl alcohol concentration in ug/l
<50.0	Less than the stated laboratory reporting limit
ug/l	Micrograms per liter

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GROUNDWATER SAMPLE ANALYSES MAP 01/26/05

MOBIL STATION 18L2N
17836 Devonshire Street
Northridge, California

PROJECT NO. 3234

PLATE 4

DATE: 02/25/05

TABLE 1
GROUNDWATER MONITORING AND SAMPLING SCHEDULE
AND WELL CONSTRUCTION DETAILS
MOBIL STATION 18L2N
17836 DEVONSHIRE STREET
NORTHRIDGE, CALIFORNIA
ERI 3234

CURRENT MONITORING WELL SAMPLING/ACTIVITY SCHEDULE			
WELL NUMBER	WELL ACTIVITY	FREQUENCY OF GAUGING	FREQUENCY OF SAMPLING
MW1	P	quarterly	quarterly
MW2	P	quarterly	quarterly
MW3	P	quarterly	quarterly

NP = no-purge
P = purge

WELL CONSTRUCTION INFORMATION				
WELL ID	INSTALL DATE	CASING/BOREHOLE DIAMETER	SCREENED INTERVAL (ft)	TOTAL DEPTH (ft)
MW1	01/14/04	4"/8"	75-104.5	105
VEW1	01/14/04	2"/8"	35-54.5	55
MW2	01/15/04	4"/10"	75-104.5	105
VEW2	01/15/04	2"/10"	35-64.5	65
MW3	02/02/04	4"/10"	75-104.5	105

TOTAL DEPTH = depth of boring

TABLE 2

WATER LEVEL MEASUREMENTS AND GROUNDWATER ANALYSES

MOBIL STATION 18L2N

17836 DEVONSHIRE STREET

NORTHRIDGE, CALIFORNIA

ERI 3234

MW1	ELEV:	980.83						
DATE	GW DEPTH	GW ELEV.	B	T	E	X	TPHg	MTBE
01/26/05	85.65	895.18	<1.00	<1.00	<1.00	<1.00	<50.0	3.60
MW2	ELEV:	978.67						
DATE	GW DEPTH	GW ELEV.						
01/26/05	86.05	892.62	50.0	119	12.5	243	1280	<2.00
MW3	ELEV:	981.51						
DATE	GW DEPTH	GW ELEV.						
01/26/05	88.03	893.48	<1.00	<1.00	<1.00	<1.00	<50.0	<2.00

EXPLANATION:

Results reported in micrograms per liter (ug/l).

GW = groundwater

ELEV = elevation

B = benzene; T = toluene; E = ethylbenzene; X = total xylene isomers; TPHg = total petroleum hydrocarbons as gasoline

Methyl tertiary butyl ether (MTBE) analyzed by EPA Method 8260B.

<50.0 = not detected at or above the stated laboratory reporting limit

TABLE 3

CUMULATIVE WATER LEVEL MEASUREMENTS AND GROUNDWATER ANALYSES

MOBIL STATION 18L2N

17836 DEVONSHIRE STREET

NORTHRIDGE, CALIFORNIA

ERI 3234

Date	Well Elev	GW Depth	GW Elev	LPH	Benzene (ug/l)	Toluene (ug/l)	Ethyl-benzene (ug/l)	Xylenes (ug/l)	TPHg (ug/l)	MTBE (ug/l)	DIPE (ug/l)	ETBE (ug/l)	TAME (ug/l)	TBA (ug/l)	Ethanol (ug/l)	Methanol (ug/l)
Field Point	**MW1**															
2/20/2004	980.83	85.33	895.50	no	<0.50	<0.50	<0.50	<0.50	<50.0	9.70	<0.50	<0.50	<0.50	<50.0		
5/21/2004	980.83	85.51	895.32	no	<1.00	<1.00	<1.00	<1.00	<50.0	4.80	<1.00	<1.00	<1.00	<10.0	<1000	<10000
8/27/2004	980.83	87.14	893.69	no	<1.00	<1.00	<1.00	<1.00	<50.0	7.00	<1.00	<1.00	<1.00	<10.0		
10/25/2004	980.83	85.80	895.03	no	<1.00	<1.00	<1.00	<1.00	<50.0	4.80	<1.00	<1.00	<1.00	<10.0		
1/26/2005	980.83	85.65	895.18	no	<1.00	<1.00	<1.00	<1.00	<50.0	3.60	<1.00	<1.00	<1.00	<10.0	<1000	<10000
Field Point	**MW2**															
2/20/2004	978.67	86.04	892.63	no	181	444	17.3	614	2080	0.40J	<0.50	<0.50	<0.50	<50.0		
5/21/2004	978.67	86.21	892.46	no	44.8	146	9.70	339	2640	<2.00	<1.00	<1.00	<1.00	<10.0	<1000	<10000
8/27/2004	978.67	86.93	891.74	no	135	300	72.9	850	4640	<2.00	<1.00	<1.00	<1.00	<10.0		
10/25/2004	978.67	85.34	893.33	no	149	193	92.2	638	4820	<2.00	<1.00	<1.00	<1.00	<10.0		
1/26/2005	978.67	86.05	892.62	no	50.0	119	12.5	243	1280	<2.00	<1.00	<1.00	<1.00	<10.0	<1000	<10000
Field Point	**MW3**															
2/20/2004	981.51	87.90	893.61	no	<0.50	<0.50	<0.50	<0.50	<50.0	<0.50	<0.50	<0.50	<0.50	<50.0		
5/21/2004	981.51	88.00	893.51	no	<1.00	<1.00	<1.00	1.70	<50.0	<2.00	<1.00	<1.00	<1.00	<10.0	<1000	<10000
8/27/2004	981.51	88.71	892.80	no	<1.00	<1.00	<1.00	<1.00	<50.0	<2.00	<1.00	<1.00	<1.00	<10.0		
10/25/2004	981.51	88.27	893.24	no	<1.00	<1.00	<1.00	<1.00	<50.0	<2.00	<1.00	<1.00	<1.00	<10.0		
1/26/2005	981.51	88.03	893.48	no	<1.00	<1.00	<1.00	<1.00	<50.0	<2.00	<1.00	<1.00	<1.00	<10.0	<1000	<10000
Field Point	**TRIP BLANK**															
2/20/2004				no	<0.50	0.30J	<0.50	<0.50	<50.0	<0.50	<0.50	<0.50	<0.50	<50.0		
5/21/2004				no	<1.00	<1.00	<1.00	<1.00	<50.0	<2.00	<1.00	<1.00	<1.00	<10.0		
8/27/2004				no	<1.00	<1.00	<1.00	<1.00	<50.0	<2.00	<1.00	<1.00	<1.00	<10.0		

TABLE 3

CUMULATIVE WATER LEVEL MEASUREMENTS AND GROUNDWATER ANALYSES

MOBIL STATION 18L2N

17836 DEVONSHIRE STREET

NORTHRIDGE, CALIFORNIA

ERI 3234

Date	Well Elev	GW Depth	GW Elev	LPH	Benzene (ug/l)	Toluene (ug/l)	Ethyl-benzene (ug/l)	Xylenes (ug/l)	TPHg (ug/l)	MTBE (ug/l)	DIPE (ug/l)	ETBE (ug/l)	TAME (ug/l)	TBA (ug/l)	Ethanol (ug/l)	Methanol (ug/l)
10/25/2004				no	<1.00	<1.00	<1.00	<1.00	<50.0	<2.00	<1.00	<1.00	<1.00	<10.0		
1/26/2005				no	<1.00	<1.00	<1.00	<1.00	<50.0	<2.00	<1.00	<1.00	<1.00	<10.0	<1000	<10000

TABLE 3

CUMULATIVE WATER LEVEL MEASUREMENTS AND GROUNDWATER ANALYSES

MOBIL STATION 18L2N

17836 DEVONSHIRE STREET

NORTHRIDGE, CALIFORNIA

ERI 3234

Explanation:
ELEV = elevation
EPA = Environmental Protection Agency
GW = groundwater
DIPE = di-isopropyl ether
ETBE = ethyl tertiary butyl ether
TAME = tertiary amyl methyl ether
TBA = tertiary butyl alcohol
TPHg = total petroleum hydrocarbons as gasoline
MTBE = methyl tertiary butyl ether
MTBE analyzed by EPA Method 82620B.
LPH = liquid phase hydrocarbons (thickness measured in feet)
<10000 = not detected at or above stated laboratory reporting limit
ug/l = micrograms per liter

TestAmerica
ANALYTICAL TESTING CORPORATION

2960 Foster Creighton Drive • Nashville, Tennessee 37204
800-765-0980 • 615-726-3404 Fax

RP

2/ 4/05

ENVIRONMENTAL RESOLUTIONS, INC 10229
PAT TOELKES
20372 NORTH SEA CIRCLE
LAKE FOREST, CA 92630

This report includes the analytical certificates of analysis for all samples listed below. These samples relate to your project identified below:

Project Name: EXXONMOBIL 18-L2N
Project Number: ERI 3234 13.
Laboratory Project Number: 404495.

An executed copy of the chain of custody, the project quality control data, and the sample receipt form are also included as an addendum to this report. Any QC recoveries outside laboratory control limits are flagged individually with an #. Sample specific comments and quality control statements are included in the Laboratory notes section of the analytical report for each sample report. If you have any questions relating to this analytical report, please contact your Laboratory Project Manager at 1-800-765-0980. Any opinions, if expressed, are outside the scope of the Laboratory's accreditation.

Sample Identification	Lab Number	Collection Date
W-85-MW1	05-A12213	1/26/05
W-86-MW2	05-A12214	1/26/05
W-88-MW3	05-A12215	1/26/05
Trip Blank	05-A12216	1/26/05

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Sample Identification	Lab Number	Collection Date

These results relate only to the items tested.
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Report Approved By: Roxanne L. Connor Report Date: 2/ 4/05

Johnny A. Mitchell, Laboratory Director
Michael H. Dunn, M.S., Technical Director
Pamela A. Langford, Senior Project Manager
Eric S. Smith, QA/QC Director
Sandra McMillin, Technical Services
Gail A. Lage, Senior Project Manager
Glenn L. Norton, Technical Services
Kelly S. Comstock, Technical Services
Roxanne L. Connor, Senior Project Manag

Laboratory Certification Number: 01168CA

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ANALYTICAL REPORT

ENVIRONMENTAL RESOLUTIONS, INC 10229
PAT TOELKES
20372 NORTH SEA CIRCLE
LAKE FOREST, CA 92630

Lab Number: 05-A12213
Sample ID: W-85-MW1
Sample Type: Water
Site ID: 18-L2N

Project: ERI 3234 13
Project Name: EXXONMOBIL 18-L2N
Sampler: RAYMOND ORZULAK

Date Collected: 1/26/05
Time Collected: 9:10
Date Received: 1/28/05
Time Received: 8:00
Page: 1

Purchase Order: 4505826165

Analyte	Result	Units	Report Limit	Dil Factor	Analysis Date	Analysis Time	Analyst	Method	Batch
ORGANIC PARAMETERS									
**TPH (Gasoline Range)	ND	ug/l	50.0	1.0	2/ 1/05	14:54	H. Wagner	8015B	3498
VOLATILE ORGANICS									
**Ethyl-t-butylether	ND	ug/l	1.00	1.0	2/ 3/05	4:22	A. Steimle	8260B	7921
**tert-amyl methyl ether	ND	ug/L	1.00	1.0	2/ 3/05	4:22	A. Steimle	8260B	7921
**Tertiary butyl alcohol	ND	ug/l	10.0	1.0	2/ 3/05	4:22	A. Steimle	8260B	7921
**Benzene	ND	ug/l	1.00	1.0	2/ 3/05	4:22	A. Steimle	8260B	7921
**Ethylbenzene	ND	ug/l	1.00	1.0	2/ 3/05	4:22	A. Steimle	8260B	7921
**Toluene	ND	ug/l	1.00	1.0	2/ 3/05	4:22	A. Steimle	8260B	7921
**Xylenes (Total)	ND	ug/l	1.00	1.0	2/ 3/05	4:22	A. Steimle	8260B	7921
**Methyl-t-butyl ether	3.60	ug/l	2.00	1.0	2/ 3/05	4:22	A. Steimle	8260B	7921
Ethanol	ND	ug/L	1000	1.0	2/ 3/05	4:22	A. Steimle	8260B	7921
**Diisopropyl ether	ND	ug/l	1.00	1.0	2/ 3/05	4:22	A. Steimle	8260/SA05-77	7921
MISCELLANEOUS GC PARAMETERS									
**Methanol	ND	ug/l	10000	1.0	2/ 2/05	20:50	K. Roberso	8015B	6356

Surrogate	% Recovery	Target Range
BTEX/GRO Surr., a,a,a-TFT	90.	69. - 132.
GC FID Surrogate	108.	50. - 150.
VOA Surr 1,2-DCA-d4	102.	73. - 127.

Sample report continued . . .

TestAmerica
ANALYTICAL TESTING CORPORATION

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ANALYTICAL REPORT

Laboratory Number: 05-A12213
Sample ID: W-85-MW1
Project: ERI 3234 13

Surrogate	% Recovery	Target Range
VOA Surr Toluene-d8	99.	79. - 113.
VOA Surr, 4-BFB	104.	79. - 125.
VOA Surr, DBFM	105.	75. - 134.

LABORATORY COMMENTS:
ND = Not detected at the report limit.
B = Analyte was detected in the method blank.
J = Estimated Value below Report Limit.
E = Estimated Value above the calibration limit of the instrument.
# = Recovery outside Laboratory historical or method prescribed limits.
** = NELAC E87358 Certified Analyte

End of Sample Report.

TestAmerica
ANALYTICAL TESTING CORPORATION

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ANALYTICAL REPORT

ENVIRONMENTAL RESOLUTIONS, INC 10229
PAT TOELKES
20372 NORTH SEA CIRCLE
LAKE FOREST, CA 92630

Lab Number: 05-A12214
Sample ID: W-86-MW2
Sample Type: Water
Site ID: 18-L2N

Project: ERI 3234 13
Project Name: EXXONMOBIL 18-L2N
Sampler: RAYMOND ORZULAK

Date Collected: 1/26/05
Time Collected: 9:20
Date Received: 1/28/05
Time Received: 8:00
Page: 1

Purchase Order: 4505826165

Analyte	Result	Units	Report Limit	Dil Factor	Analysis Date	Analysis Time	Analyst	Method	Batch
ORGANIC PARAMETERS									
**TPH (Gasoline Range)	1280	ug/l	50.0	1.0	2/ 1/05	15:24	H. Wagner	8015B	3498
VOLATILE ORGANICS									
**Ethyl-t-butylether	ND	ug/l	1.00	1.0	2/ 3/05	4:41	A. Steimle	8260B	7921
**tert-amyl methyl ether	ND	ug/L	1.00	1.0	2/ 3/05	4:41	A. Steimle	8260B	7921
**Tertiary butyl alcohol	ND	ug/l	10.0	1.0	2/ 3/05	4:41	A. Steimle	8260B	7921
**Benzene	50.0	ug/l	1.00	1.0	2/ 3/05	4:41	A. Steimle	8260B	7921
**Ethylbenzene	12.5	ug/l	1.00	1.0	2/ 3/05	4:41	A. Steimle	8260B	7921
**Toluene	119.	ug/l	1.00	1.0	2/ 3/05	4:41	A. Steimle	8260B	7921
**Xylenes (Total)	243.	ug/l	1.00	1.0	2/ 3/05	4:41	A. Steimle	8260B	7921
**Methyl-t-butyl ether	ND	ug/l	2.00	1.0	2/ 3/05	4:41	A. Steimle	8260B	7921
Ethanol	ND	ug/L	1000	1.0	2/ 3/05	4:41	A. Steimle	8260B	7921
**Diisopropyl ether	ND	ug/l	1.00	1.0	2/ 3/05	4:41	A. Steimle	8260/SA05-77	7921
MISCELLANEOUS GC PARAMETERS									
**Methanol	ND	ug/l	10000	1.0	2/ 2/05	20:56	K. Roberso	8015B	6356

Surrogate	% Recovery	Target Range
BTEX/GRO Surr., a,a,a-TFT	110.	69. - 132.
GC FID Surrogate	112.	50. - 150.
VOA Surr 1,2-DCA-d4	105.	73. - 127.

Sample report continued . . .

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ANALYTICAL REPORT

Laboratory Number: 05-A12214
Sample ID: W-86-MW2
Project: ERI 3234 13

Surrogate	% Recovery	Target Range
VOA Surr Toluene-d8	96.	79. - 113.
VOA Surr, 4-BFB	103.	79. - 125.
VOA Surr, DBFM	105.	75. - 134.

LABORATORY COMMENTS:
ND = Not detected at the report limit.
B = Analyte was detected in the method blank.
J = Estimated Value below Report Limit.
E = Estimated Value above the calibration limit of the instrument.
# = Recovery outside Laboratory historical or method prescribed limits.
** = NELAC E87358 Certified Analyte

End of Sample Report.

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ANALYTICAL REPORT

ENVIRONMENTAL RESOLUTIONS, INC 10229
PAT TOELKES
20372 NORTH SEA CIRCLE
LAKE FOREST, CA 92630

Lab Number: 05-A12215
Sample ID: W-88-MW3
Sample Type: Water
Site ID: 18-L2N

Date Collected: 1/26/05
Time Collected: 9:15
Date Received: 1/28/05
Time Received: 8:00
Page: 1

Project: ERI 3234 13
Project Name: EXXONMOBIL 18-L2N
Sampler: RAYMOND ORZULAK

Purchase Order: 4505826165

Analyte	Result	Units	Report Limit	Dil Factor	Analysis Date	Analysis Time	Analyst	Method	Batch
ORGANIC PARAMETERS									
**TPH (Gasoline Range)	ND	ug/l	50.0	1.0	2/ 1/05	15:55	H. Wagner	8015B	3498
VOLATILE ORGANICS									
**Ethyl-t-butylether	ND	ug/l	1.00	1.0	2/ 3/05	4:59	A. Steimle	8260B	7921
**tert-amyl methyl ether	ND	ug/L	1.00	1.0	2/ 3/05	4:59	A. Steimle	8260B	7921
**Tertiary butyl alcohol	ND	ug/l	10.0	1.0	2/ 3/05	4:59	A. Steimle	8260B	7921
**Benzene	ND	ug/l	1.00	1.0	2/ 3/05	4:59	A. Steimle	8260B	7921
**Ethylbenzene	ND	ug/l	1.00	1.0	2/ 3/05	4:59	A. Steimle	8260B	7921
**Toluene	ND	ug/l	1.00	1.0	2/ 3/05	4:59	A. Steimle	8260B	7921
**Xylenes (Total)	ND	ug/l	1.00	1.0	2/ 3/05	4:59	A. Steimle	8260B	7921
**Methyl-t-butyl ether	ND	ug/l	2.00	1.0	2/ 3/05	4:59	A. Steimle	8260B	7921
Ethanol	ND	ug/L	1000	1.0	2/ 3/05	4:59	A. Steimle	8260B	7921
**Diisopropyl ether	ND	ug/l	1.00	1.0	2/ 3/05	4:59	A. Steimle	8260/SA05-77	7921
MISCELLANEOUS GC PARAMETERS									
**Methanol	ND	ug/l	10000	1.0	2/ 2/05	21:02	K. Roberso	8015B	6356

Surrogate	% Recovery	Target Range
BTEX/GRO Surr., a,a,a-TFT	90.	69. - 132.
GC FID Surrogate	109.	50. - 150.
VOA Surr 1,2-DCA-d4	101.	73. - 127.

Sample report continued . . .

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ANALYTICAL REPORT

Laboratory Number: 05-A12215
Sample ID: W-88-MW3
Project: ERI 3234 13

Surrogate	% Recovery	Target Range
VOA Surr Toluene-d8	100.	79. - 113.
VOA Surr, 4-BFB	103.	79. - 125.
VOA Surr, DBFM	104.	75. - 134.

LABORATORY COMMENTS:
ND = Not detected at the report limit.
B = Analyte was detected in the method blank.
J = Estimated Value below Report Limit.
E = Estimated Value above the calibration limit of the instrument.
# = Recovery outside Laboratory historical or method prescribed limits.
** = NELAC E87358 Certified Analyte

End of Sample Report.

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ANALYTICAL REPORT

ENVIRONMENTAL RESOLUTIONS, INC 10229
PAT TOELKES
20372 NORTH SEA CIRCLE
LAKE FOREST, CA 92630

Project: ERI 3234 13
Project Name: EXXONMOBIL 18-L2N
Sampler: RAYMOND ORZULAK

Purchase Order: 4505826165

Lab Number: 05-A12216
Sample ID: Trip Blank
Sample Type: Water
Site ID: 18-L2N

Date Collected: 1/26/05
Time Collected:
Date Received: 1/28/05
Time Received: 8:00
Page: 1

Analyte	Result	Units	Report Limit	Dil Factor	Analysis Date	Analysis Time	Analyst	Method	Batch
ORGANIC PARAMETERS									
**TPH (Gasoline Range)	ND	ug/l	50.0	1.0	2/ 1/05	16:25	H. Wagner	8015B	3498
VOLATILE ORGANICS									
**Ethyl-t-butylether	ND	ug/l	1.00	1.0	2/ 3/05	2:50	A. Steimle	8260B	7921
**tert-amyl methyl ether	ND	ug/L	1.00	1.0	2/ 3/05	2:50	A. Steimle	8260B	7921
**Tertiary butyl alcohol	ND	ug/l	10.0	1.0	2/ 3/05	2:50	A. Steimle	8260B	7921
**Benzene	ND	ug/l	1.00	1.0	2/ 3/05	2:50	A. Steimle	8260B	7921
**Ethylbenzene	ND	ug/l	1.00	1.0	2/ 3/05	2:50	A. Steimle	8260B	7921
**Toluene	ND	ug/l	1.00	1.0	2/ 3/05	2:50	A. Steimle	8260B	7921
**Xylenes (Total)	ND	ug/l	1.00	1.0	2/ 3/05	2:50	A. Steimle	8260B	7921
**Methyl-t-butyl ether	ND	ug/l	2.00	1.0	2/ 3/05	2:50	A. Steimle	8260B	7921
Ethanol	ND	ug/L	1000	1.0	2/ 3/05	2:50	A. Steimle	8260B	7921
**Diisopropyl ether	ND	ug/l	1.00	1.0	2/ 3/05	2:50	A. Steimle	8260/SA05-77	7921
MISCELLANEOUS GC PARAMETERS									
**Methanol	ND	ug/l	10000	1.0	2/ 2/05	21:08	K. Roberso	8015B	6356

Surrogate	% Recovery	Target Range
BTEX/GRO Surr., a,a,a-TFT	90.	69. - 132.
GC FID Surrogate	100.	50. - 150.
VOA Surr 1,2-DCA-d4	104.	73. - 127.

Sample report continued . . .

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ANALYTICAL REPORT

Laboratory Number: 05-A12216
Sample ID: Trip Blank
Project: ERI 3234 13

Surrogate	% Recovery	Target Range
VOA Surr Toluene-d8	96.	79. - 113.
VOA Surr, 4-BFB	101.	79. - 125.
VOA Surr, DBFM	105.	75. - 134.

LABORATORY COMMENTS:
ND = Not detected at the report limit.
B = Analyte was detected in the method blank.
J = Estimated Value below Report Limit.
E = Estimated Value above the calibration limit of the instrument.
# = Recovery outside Laboratory historical or method prescribed limits.
** = NELAC E87358 Certified Analyte

End of Sample Report.

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PROJECT QUALITY CONTROL DATA
Project Number: ERI 3234 13
Project Name: EXXONMOBIL 18-L2N
Page: 1
Laboratory Receipt Date: 1/28/05

Matrix Spike Recovery

Note: If Blank is referenced as the sample spiked, insufficient volume was received for the defined analytical batch for MS/MSD analysis on an true sample matrix. Laboratory reagent water was used for QC purposes.

Analyte	units	Orig. Val.	MS Val	Spike Conc	Recovery	Target Range	Q.C. Batch	Spike Sample
UST ANALYSIS								
TPH (Gasoline Range)	mg/l	< 0.0500	0.926	1.00	93	43. - 150.	3498	blank
BTEX/GRO Surr., a,a,a-TFT	% Recovery				155	69 - 132	3498	
VOA PARAMETERS								
Benzene	mg/l	< 0.00025	0.0556	0.0500	111	62 - 143	7921	blank
Toluene	mg/l	< 0.00017	0.0545	0.0500	109	63 - 141	7921	blank
VOA Surr 1,2-DCA-d4	% Rec				96	73 - 127	7921	
VOA Surr Toluene-d8	% Rec				100	79 - 113	7921	
VOA Surr, 4-BFB	% Rec				103	79 - 125	7921	
VOA Surr, DBFM	% Rec				103	75 - 134	7921	
Methanol	mg/l	< 10.0	56.9	50.0	114	52. - 133.	6356	05-A12171

Matrix Spike Duplicate

Analyte	units	Orig. Val.	Duplicate	RPD	Limit	Q.C. Batch
UST PARAMETERS						
TPH (Gasoline Range)	mg/l	0.926	0.920	0.65	27.	3498
BTEX/GRO Surr., a,a,a-TFT	% Recovery		154.			3498

Project QC continued . . .

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PROJECT QUALITY CONTROL DATA
Project Number: ERI 3234 13
Project Name: EXXONMOBIL 18-L2N

Laboratory Receipt Date: 1/28/05

VOA PARAMETERS						
Benzene	mg/l	0.0556	0.0460	18.90	27.	7921
Toluene	mg/l	0.0545	0.0442	20.87	34.	7921
VOA Surr 1,2-DCA-d4	% Rec		99.			7921
VOA Surr Toluene-d8	% Rec		98.			7921
VOA Surr, 4-BFB	% Rec		102.			7921
VOA Surr, DBFM	% Rec		105.			7921
MISC PARAMETERS						
Methanol	mg/l	56.9	58.6	2.94	50	6356

Laboratory Control Data

Analyte	units	Known Val.	Analyzed Val	% Recovery	Target Range	Q.C. Batch
UST PARAMETERS						
TPH (Gasoline Range)	mg/l	1.00	0.912	91	64 - 130	3498
BTEX/GRO Surr., a,a,a-TFT	% Recovery			144	69 - 132	3498
VOA PARAMETERS						
Ethyl-t-butylether	mg/l	0.0500	0.0426	85	67 - 140	7921
tert-amyl methyl ether	mg/L	0.0500	0.0427	85	68 - 134	7921
Tertiary butyl alcohol	mg/l	0.500	0.496	99	28 - 182	7921
Benzene	mg/l	0.0500	0.0413	83	78 - 123	7921
Ethylbenzene	mg/l	0.0500	0.0421	84	80 - 124	7921
Toluene	mg/l	0.0500	0.0410	82	77 - 124	7921
Xylenes (Total)	mg/l	0.150	0.127	85	81 - 124	7921
Methyl-t-butyl ether	mg/l	0.0500	0.0450	90	69 - 136	7921
Ethanol	mg/L	5.00	4.16	83	48 - 164	7921
Diisopropyl ether	mg/l	0.0500	0.0407	81	65 - 140	7921
Methanol	mg/l	50.0	59.3	119	69 - 125	6356

Project QC continued . . .

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PROJECT QUALITY CONTROL DATA
Project Number: ERI 3234 13
Project Name: EXXONMOBIL 18-L2N
Page: 3
Laboratory Receipt Date: 1/28/05

VOA Surr 1,2-DCA-d4	% Rec		95	73 - 127	7921
VOA Surr Toluene-d8	% Rec		98	79 - 113	7921
VOA Surr, 4-BFB	% Rec		103	79 - 125	7921
VOA Surr, DBFM	% Rec		105	75 - 134	7921

Duplicates

Analyte	units	Orig. Val.	Duplicate	RPD	Limit	Q.C. Batch	Sample Dup'd

Blank Data

Analyte	Blank Value	Units	Q.C. Batch	Date Analyzed	Time Analyzed
UST PARAMETERS					
TPH (Gasoline Range)	< 0.0500	mg/l	3498	2/ 1/05	10:43
BTEX/GRO Surr., a,a,a-TFT	92.	% Recovery	3498	2/ 1/05	10:43
VOA PARAMETERS					
Ethyl-t-butylether	< 0.00027	mg/l	7921	2/ 3/05	1:54
tert-amyl methyl ether	< 0.00030	mg/L	7921	2/ 3/05	1:54
Tertiary butyl alcohol	< 0.00428	mg/l	7921	2/ 3/05	1:54
Benzene	< 0.00025	mg/l	7921	2/ 3/05	1:54
Ethylbenzene	< 0.00019	mg/l	7921	2/ 3/05	1:54
Toluene	< 0.00017	mg/l	7921	2/ 3/05	1:54
Xylenes (Total)	< 0.00033	mg/l	7921	2/ 3/05	1:54
Methyl-t-butyl ether	< 0.00023	mg/l	7921	2/ 3/05	1:54
Ethanol	< 0.0307	mg/L	7921	2/ 3/05	1:54
Diisopropyl ether	< 0.00018	mg/l	7921	2/ 3/05	1:54

Project QC continued . . .

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PROJECT QUALITY CONTROL DATA
Project Number: ERI 3234 13
Project Name: EXXONMOBIL 18-L2N
Page: 4
Laboratory Receipt Date: 1/28/05

VOA Surr 1,2-DCA-d4	99.	% Rec	7921	2/ 3/05	1:54
VOA Surr Toluene-d8	100.	% Rec	7921	2/ 3/05	1:54
VOA Surr, 4-BFB	103.	% Rec	7921	2/ 3/05	1:54
VOA Surr, DBFM	103.	% Rec	7921	2/ 3/05	1:54
Methanol	< 10.0	mg/l	6356	2/ 2/05	19:47

= Value outside Laboratory historical or method prescribed QC limits.

End of Report for Project 404495

TestAmerica
ANALYTICAL TESTING CORPORATION
Nashville Division

COOLER RECEIPT FORM **BC#** 404495

Client Name : ERI

Cooler Received/Opened On: 1/28/05 **Accessioned By:** Shane Gambill

Log-in Personnel Signature

1. **Temperature of Cooler when triaged:** 3.2 **Degrees Celsius**
2. **Were custody seals on outside of cooler?** ..... YES...NO...NA
   a. **If yes, how many, and where:** 1 Front
3. **Were custody seals on containers?** ..... NO...YES...NA
4. **Were the seals intact, signed, and dated correctly?** ..... YES...NO...NA
5. **Were custody papers inside cooler?** ..... YES...NO...NA
6. **Were custody papers properly filled out (ink, signed, etc)?** ..... YES...NO...NA
7. **Did you sign the custody papers in the appropriate place?** ..... YES...NO...NA
8. **What kind of packing material used?** Bubblewrap Peanuts Vermiculite Other None
9. **Cooling process:** Ice Ice-pack Ice (direct contact) Dry ice Other None
10. **Did all containers arrive in good condition (unbroken)?** ..... YES...NO...NA
11. **Were all container labels complete (#, date, signed, pres., etc)?** ..... YES...NO...NA
12. **Did all container labels and tags agree with custody papers?** ..... YES...NO...NA
13. **Were correct containers used for the analysis requested?** ..... YES...NO...NA
14. a. **Were VOA vials received?** ..... YES...NO...NA
    b. **Was there any observable head space present in any VOA vial?** ..... NO...YES...NA
15. **Was sufficient amount of sample sent in each container?** ..... YES...NO...NA
16. **Were correct preservatives used?** ..... YES...NO...NA
    If not, record standard ID of preservative used here _____
17. **Was residual chlorine present?** ..... NO...YES...NA
18. **Indicate the Airbill Tracking Number (last 4 digits for Fedex only) and Name of Courier below:**

Fed-Ex UPS Velocity DHL Route Off-street Misc.

19. **If a Non-Conformance exists, see attached or comments below:**

6046

TestAmerica INCORPORATED

Nashville Division
2960 Foster Creighton
Nashville, TN 37204

Phone: 615-726-0177
Toll Free: -765-0980
Fax: 615-726-3404

ExxonMobil

Pg 1 of 1

404495

Consultant Name:	Environmental Resolutions, Inc.	**TA Account #:**	10229
Address:	20372 North Sea Circle	**Invoice To:**	Jeneé Briggs
City/State/Zip:	Lake Forest, CA 92630	**Report To:**	PAT TOELKES
ExxonMobil Territory Mgr:	Jeneé Briggs	**PO #:**	4504578390
Consultant Project Mgr:	PAT TOELKES	**Facility ID #**	ERI 3234 13 / EXXONMOBIL 18L2N
Consultant Telephone Number:	949-457-8950 **Fax No.:** 949-457-8956	**Site Address**	17836 DEVONSHIRE ST.
Sampler Name: (Print)	RAYMOND ORZULAK	**City, State, Zip**	NORTHRIDGE, CA
Sampler Signature:		**Regulatory District (CA)**	LARWQCB

Sample ID or Field ID	Date Sampled	Time Sampled	No. of Containers Shipped	Grab	Composite	Field Filtered	Preservative: Methanol	Sodium Bisulfate	HCl (Blue Label)	NaOH (Orange Label)	H_2SO_4 Plastic (Yellow Label)	H_2SO_4 Glass(Yellow Label)	HNO_3 (Red Label)	None (Black Label)	Matrix: Groundwater	Wastewater	Drinking Water	Sludge	Soil	Other (specify):	Analyze For: 8015M DIESEL	TPH/GAS-8015B	FULL SCAN 8260B +OXYGENATES	METHANOL	ETHANOL	*8260B/BTEX +OXYGENATES ONLY	BTEX/MTBE BY 8021	8010	REDOX POTENTIAL	NITRATE/SULFATE	METHANE(8015)	RUSH TAT (Pre-Schedule)	5 Day TAT request	Fax Results (yes or no)	Due Date of Report
W-8S-MW1	1-26-05	0910	5	X					X						X							X		+	+	X		12	13				X		
W-8G-MW2	↓	0920	5	↓					↓						↓							X		X	X	X			14				↓		
W-8B-MW3		0915	5																			X		X	X	X			15						
TRIP BLANKS	↓	—	4	↓					↓						↓							X		X	X	✓		✓	16				↓		

Comments/Special Instructions: ***OXYGENATES WHEN REQUESTED ABOVE TO INCLUDE; BTEX, MTBE, DIPE, ETBE, TAME, TBA.**

CONSULTANT ID # ERIL
GLOBAL ID # T0603702181

"PLEASE E-MAIL ALL EDF FILES TO RSHEARER@ERI-US.COM"

Relinquished by:	Date	Time	Received by:	Date	Time
	1-27-05	1330		1-27-05	1330
Relinquished by:	Date	Time	Received by (Lab personel)	Date	Time
Fed Ex	1-27-05	1800		11/26/05	8:00

Laboratory Comments:

Temperature Upon Receipt:
Sample Containers Intact? Y N
VOCs Free of Headspace? Y N

QC Deliverables (please circle one)
Level 2
Level 3
Level 4

5 DAY TURN-AROUND FOR EXXONMOBIL REQUIRED

Site Specific-if yes, please pre-schedule w/ TestAmerica Project Manager or attach specific instructions

PURGING AND SAMPLING - FIELD LOG

CLIENT NAME: EXXONMOBIL 18-L2N | **ERI JOB # 3234 13** | **0.163 FOR A 2" WELL**

SITE LOCATION: 17836 DEVONSHIRE | **ANALYSIS: TPHg/8260B** | **0.652 FOR A 4" WELL**

FIELD CREW: RO | **DATE: 01/26/05** | **1.167 FOR A 6" WELL**

WELL #	TIME	DEPTH TO WATER	DEPTH TO WELL	CASE DIA	CASE VOL	PRG VOL	COND.	TEMP	pH
MW1	7:25 AM	85.65	104.25	4	12	36			
	7:45 AM					1	2.05	72.8	7.88
	7:50 AM					12	2.10	72.5	7.81
	7:56 AM					24	2.12	72.4	7.79
	8:02 AM					36	2.11	72.4	7.96
SW	9:10 AM	85.99							
COMMENTS	Water Cloudy								

WELL #	TIME	DEPTH TO WATER	DEPTH TO WELL	CASE DIA	CASE VOL	PRG VOL	COND.	TEMP	pH
MW3	7:30 AM	88.03	103.41	4	9	27			
	8:15 AM					1	1.45	72.1	7.56
	8:19 AM					9	1.40	72.4	7.60
	8:24 AM					18	1.38	72.6	7.62
	8:29 AM					27	1.37	72.7	7.63
SW	9:15 AM	88.56							
COMMENTS	Water Cloudy								

WELL #	TIME	DEPTH TO WATER	DEPTH TO WELL	CASE DIA	CASE VOL	PRG VOL	COND.	TEMP	pH
MW2	7:35 AM	86.05	103.23	4	10	30			
	8:45 AM					1	1.99	73.0	8.06
	8:49 AM					10	2.04	73.4	8.01
	8:54 AM					20	2.07	73.6	7.99
	8:59 AM					30	2.08	73.7	7.98
SW	9:20 AM	86.91							
COMMENTS	Water Cloudy								

WELL #	TIME	DEPTH TO WATER	DEPTH TO WELL	CASE DIA	CASE VOL	PRG VOL	COND.	TEMP	pH
SW									
COMMENTS:									

WELL SAMPLING & SURVEYING
SOP-5

Rev. 6/08/94

WELL SAMPLING AND SURVEYING

1) Open well heads. This may require a socket or a special allen wrench.

2) Survey the wells if this hasn't been done before as follows:

   a) Select a permanent benchmark (e.g. curb at corner of site, property line). Record on "SURVEYGW" form.
   b) Measure and record rectangular coordinates from benchmark to each well.
   c) Set up tripod and transit where it can see all wells and the benchmark = Station "A". If you can't see all wells, two transit locations must be used. At least one well surveyed from Station "A" must be resurveyed from Station "B". Preferably, two or more wells are resurveyed.
   d) Carefully level the tripod using the bubble indicator.
   e) Place stadia rod on benchmark and record height from crosshair to reference, (D_o).
   f) Place stadia rod on each well (at the notch) and record ht. from well to crosshair, (D_w).
   g) Calculate casing elevation as shown on data sheet SURVEYGW.

   To check the accuracy in leveling the transit, set the transit in second spot and repeat steps 2c through 2g. Recalculation of casing elevations should agree within 0.01 ft. or a third placement of the tripod will be required.

3) Decon the water level indicator before inserting into each well. Lower indicator until it beeps - raise and lower and mark the level on the tape with your thumb. Estimate level to the nearest 0.01 ft. Note any odor when the probe is withdrawn from the well. Look for the notch or ink mark on the top of the well and measure all levels from that. Notch should be on the highest side of the well pipe. If no side is high, notch should be on the north side. Measure from the casing adjacent to the notch - not from the bottom of the notch. If there is no notch - make one.

4) After measuring all water levels, check for a sheen in each well using a bailer. If the stainless bailer is used - decon before inserting into each well. If there is a sheen, do not purge or sample. The presence of liquid phase hydrocarbons means the concentration in the water will be high anyway and the pump will be difficult to get clean enough to avoid contaminating other wells.

5) Developing: If the well has not been developed (it is new), surge the well by moving bailer up and down vigorously in the well for about 5 minutes. This will wash silt from the sand pack into the well where it can be removed.

6) Pull out as much silt as possible by running the bailer all the way to the bottom and withdrawing. Continue bailing until water is fairly clear or until local regulatory specifications are met. Removal of silt with the bailer will extend the pump life. Contact the Project Manager if water does not clear up by 10 casing volumes.

7) Decon pump by washing in TSP/water the rinsing with tap water and rinsing again with deionized water. Then pump clean water through the pump to push out any dirty water.

8) Purging: Place pump in well about 2 to 5 feet off bottom. Withdraw at least 3 casing volumes from the well, or until temperature, pH and conductivity stabilize (see local regulations). Be careful not to let the pump run dry. Check level with the water level indicator and slow pump down when water level is within 2 ft of the pump head. While purging, collect a water sample as often as possible and check for pH, conductivity, and temperature. Stable pH and conductivity would indicate the well has been filled with representative groundwater and purging is complete. If well recharges slowly, remove 1.5 casing volumes. Estimate flow rates by recording the time it takes to fill a 5-gallon bucket (1/2 of a 55-gallon barrel, etc.)

9) Decon pump thoroughly between each well by repeating step 7.

10) Label bottles with a "Sharpie Pen" when they are dry. Label as W-xx-MWy, where xx is water depth below surface in feet and y is well number (refer to SOP-1).

11) After the well has been developed, sample the water using a disposable bailer and surgical gloves to prevent oil from your hands from contaminating the sample. Be sure to leave no headspace or bubbles in any water sample to be tested for volatiles. Wells should be sampled within (24) hours of purging and the well should have recovered to within 80% of its volume before purging. (Slow recharge wells need to be addressed with the Project Manager - and may have to be purged slowly). Gasoline contaminated water requires 2 x 40 ml VOA's from each well. Preserve samples by acidifying to pH <2 (usually with two drops of HCl). Water suspected of contamination with oil or diesel requires 2 1-liter samples in amber bottles. Samples contaminated with oil will require 10 drops of H_2SO_4 for preservation. Samples for organic lead require 2 1-liter amber bottles.

12) Place like vials in a baggie and label the baggie. Put vials and baggie in an ice chest and document samples and analyses required on a chain of custody. Take samples to the laboratory the same day samples are collected if possible, at least within 24 hours.

13) Clean wellhead gaskets (seals), put locking caps on the wells and replace the covers. Cover and label the drums (if any) of purge and decon water.

Analysis	Bottles	Preservative
8015 mod gasoline/8020(602)	2 x 40 ml VOA	2 drops HCl to pH <2
8015 mod diesel/8020(602)	2 1-liter & 2 x 40 ml VOA	2 drops HCl to pH <2 (applied to VOA's)
418.1 (TRPH)	2 1-liter amber	10 drops H_2SO_4 to pH <2
Organic Lead	2 1-liter amber	no preservative suggested
HOC - 8010 (601)	2 x 40 ml VOA	no preservative suggested

Items Needed:
Water Level Indicator
Bailer
Generator
Grundfos Pump and Reel
Grundfos Pump Control Box
Hydac Cond/Temp/pH Meter
Liter Bottles
VOAs

Distilled Water
3 Buckets
Bottle Brush
TSP Detergent
Stainless Steel Cable or Poly Rope
Cooler with Ice
Socket set and Allen Wrench (CNI Key)
Plastic sheeting

Items Needed for Surveying:
Topcon AT-F7 Transit
Tripod
Stadia Rod

QUARTERLY WELL MONITORING
SOP-6

REV. 10/24/97

QUARTERLY WELL MONITORING

1) Give the site manager advance notification of field activities. Arrange for a sufficient number of drums. Obtain a site plan with the location and ID's of the wells to be monitored and a copy of the table from the last quarterly report with the previous groundwater data.

2) Open well heads. This may require a socket or a special allen wrench.

3) Measure groundwater depths with water level indicator as per SOP-5 before any other action is taken. If the depth to the bottom of the monitoring well is unknown, reel out the water level indicator until you feel the probe contact the bottom. You may have to raise and lower the probe several times to "feel" contact with the bottom. The probe is not very heavy, and the bottom of the well may have a cushioning layer of silt. Record the depth of the well once you feel confident the probe is at the bottom. Note odors from well.

4) Calculate the linear footage of water in each well, by subtracting the depth to water from the total well depth. To obtain the casing volume in gallons, multiply the linear footage by a constant for the given well casing diameter. Typically, three casing volumes are purged from each well prior to sampling. **Always** Round up - if 3.4 gallons, then purge 4 gallons - if 12.1 gallons, then purge 13 gallons.

Casing diameter	Gallons per linear foot
2"	0.17
4"	0.66
6"	1.50
8"	2.60

5) After measuring all water levels, begin purging the wells in order of the cleanest to the most contaminated based on last quarter's data. Well purging procedures are outlined in SOP-5. While wells containing free floating product may not be sampled, the project manager may want the free product removed manually by bailer. Check with the project manager before bailing LPH. You may find that for shallow wells, it may be quicker to bail manually rather than set up the pump. Place purge and decon water in a 55-gallon drum or treat on site. Do not mix purge water from different wells in one drum. Record all purge data on Groundwater Sampling Field Logs. Record "LPH" and the thickness in feet and inches (to nearest 1/16 of an inch) in the comments section if a measurable level of LPH present. If non-measurable amount present then record "Sheen" in the comments section.

6) When the well has recovered at least 80% of its' original water level, collect samples using a clean bailer. Make sure the rope is tied securely on the bailer, you don't want to go fishing. Sample in order of the cleanest to the most contaminated. If required, collect field (equipment) blanks.

7) Trip blanks are a QA/QC procedure that must be collected at every site. Obtain a trip blank from the laboratory. They will make them up for you. The trip blank to taken unopened to the site and is kept with the other samples in the cooler unopened during the day's sampling. Label the bottle as an arbitrary monitoring well. For example: if there are 5 monitoring wells to be sampled at the site, the trip blank should be labeled as if it were a sample from MW6. The trip blank is never opened and it is used to determine if any contaminants are introduced by the laboratory or during transportation of the samples.

8) Field (equipment) blanks are a QA/QC procedure to be collected at the project manager's discretion (or always for LACDPW sites). To collect a field blank decon a bailer thoroughly; pour distilled water into the bailer; pour the distilled water from the bailer into appropriate

sample bottle(s) for the analysis to be performed, allow for no headspace; label the bottle as an arbitrary monitoring well. For example: if there are 5 monitoring wells to be sampled at the site plus a trip blank, and a field blank is to collected, the field blank should be labeled as if it were a sample from MW7 (the trip blank is MW6). If a disposable bailer is used for sampling, use a new disposable bailer to collect the field blank.

9) Label sample containers when they are dry (refer to SOP-1). Place vials from each well in a separate plastic ziplock bag and label the bag. Put bag in an ice chest and document samples and analyses required on a chain of custody (see attached examples).

10) Replace the locking caps, and the covers. Cover and label the drums of waste water. Place the drums on site in a location selected by the site manager. Usually, this will be near a dumpster or in the back, away from public view. Labels should face outward.

11) Decon all equipment before leaving the site.

In general, groundwater sampling will be performed in accordance with LUFT guidelines. Several local agencies require that groundwater sampling occur under slightly different guidelines. Check with the project manager to find out which sites require special groundwater sampling procedures. Typically, the following apply:

Orange County Health Care Agency Requirements

No special requirements. Water sampling will be performed as per the State Water Resources Board's LUFT manual.

LARWQCB Groundwater Requirements

- Purge a minimum of four well volumes if recovery is fast, or one borehole volume if recovery is slow (water does not recover to 80% of original level within two hours).
- The last three readings must be within 10% for conductivity, temperature, and pH to show stabilization. This means that all three consecutive readings must be within these limits - the first with the middle, and the first with the last, and the middle with the last. For instance, pH readings of 6.92, 6.95, and 7.00 would be sufficient.
- Even though there are no guidelines for turbidity, the measurements should be less than 10 NTU, or meet the baseline level established during development, upon completion of purging. Check with project manager if you use the baseline turbidity level.
- Prior to sampling document recovery time by measuring the water level in each well to prove that at least 80% recovery has occurred.
- A trip blank must be collected.
- In the comments column of the chain of custody, write " Prepare laboratory report in WIP format."

San Diego Department of Health
Services Groundwater Sampling Requirements

- SDDHS does not encourage purging wells until dry.
- Purge one borehole volume of water if recovery is fast, collecting pH/temperature/conductivity measurements while purging, then remove an additional one-half borehole volume of water. If the first and second measurements vary by less than 10%, purging is considered adequate. If not,

keep purging water in one-half borehole volume increments until the measurements vary by less than 10%, or three borehole volumes have been removed. Obtain three consecutive pH/temperature/conductivity measurements that are within 10% of each other.

- o If recovery is slow (water does not recover to 80% of original level within two hours) purge only one borehole volume of water.

- o Prior to sampling document recovery time by measuring the water level in each well to prove that at least 80% recovery has occurred.

Ventura County Environmental Health Division
Groundwater Sampling Requirements

- o A trip blank and a duplicate sample must be analyzed for each site.

- o Custody seals must be place over the cap of each sample.

Under certain conditions the calculated purge volumes will need to be calculated in borehole volumes instead of well casings volumes. Use the following to calculate borehole volume in gallons.

Well I.D.	Bore Volume
2"	0.90 gal/ft. in water
4"/or nested wells	1.70 gal/ft. in water

The completed groundwater sampling log must contain:
- pH/temp./conductivity and turbidity measurements indicating stabilization
- time and volume of water removed at each pH/temp./conductivity measurements
- total volume of water purged
- name of personnel performing sampling
- date and project number
- problems or unusual conditions arising during purging or sampling, such as the well going dry during purging, water in the well vault, missing well caps or locks, odors, appearance of purge water, etc.
- 80% recovery measurement and time of measurement after purging and before sampling

All chains of custody for the client's groundwater sites must contain the consultant work release number, station identification number and client contact among the other items to be filled out. Check the groundwater sampling field log and chain of custody for completeness, accuracy and neatness. If you have any questions, call!!!

Make sure that the date and time of relinquished and accepted at the lab are the same on the chain of custody. Also, make sure the lab fills in the sample condition information and signs for the samples on the chain of custody

Santa Barbara County Environmental Health Services
Groundwater Monitoring Guidelines

I. Groundwater Monitoring

A. Groundwater levels are to be monitored/measured in **all wells** in a short timespan.
B. Measure the groundwater levels (correct for "free product" thickness).
C. Use a clear bailer to check for the presence of "floating product," sheen, and odors.
D. Replace well cover until ready to purge well.

II. Purging

A. Amount: generally 3 to 5 (no more than 10) well volumes; via bailer, pumps, or vacuum truck.

B. Parameters (pH, temperature, conductivity) shall stabilize while purging.
1. Measure the parameters of a small volume (i.e., a 500 ml) of the water as it is removed from the well. Measure the parameters initially and at regular volume intervals (e.g., after every well casing volume). More frequent testing may be needed if the well is known to go dry.
2. Wells must be allowed to recharge prior to sampling (see section G of the Santa Barbara County LUFT Manual).

C. Slow recharging wells are wells that are purged dry before removing 3 well volumes of water, and take more than **two (2)** hours to recharge.
1. Note this on the field records and estimate the number of well volumes removed.
2. Allow the well to recharge a minimum of two (2) feet and then sample.
3. **Sample wells no later than 24 hours after purging.**
4. Note the water level and percentage of recharge in the report.

III. Sample Collection

A. Use either a decontaminated teflon, stainless steel, or disposable bailer.

B. Sample containers are to be supplied and certified by a laboratory:
1. VOAs of 40 ml volume (2 per well); fill VOAs first to reduce volatization.
2. 4 oz sample containers for Pb (metallic lead) analysis (if needed).

C. Fill containers by pouring along the inside of the vial to reduce volatilization.

D. Form a positive meniscus with the water, to avoid trapping air, before placing the cap on the VOA. **Samples with headspace are not acceptable for analysis.**
1. Check for bubbles by inverting and tapping gently to dislodge bubbles.
2. If bubbles are found, uncap and repeat steps C and D.

E. Label all samples and store immediately in an ice chest at 4 degrees celsius (blue ice).

F. Be careful to properly decontaminate equipment between each and every well.